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25X1 [redacted] NATIONAL RECONNAISSANCE OFFICE 25X1

WASHINGTON, D.C.

OFFICE OF THE DIRECTOR

September 23, 1967

MEMORANDUM FOR MR. NITZE
MR. HELMS
DR. HORNIG

SUBJECT: SR-71/A-12 Comparison

As requested at the ExCom meeting of September 12th, I am enclosing a number of charts which compare various aircraft and sensor performance characteristics of the SR-71 and A-12 aircraft and a partial inventory of the current assets of each program.

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problem of surveillance of North Vietnam for surface-to-surface missiles, the photographic sensors are the primary and probably the only sensors applicable; it appears to me that both aircraft sensor systems are adequate for this task.

Aircraft performance figures shown on page 3 of the attachment were obtained from the program offices and represent best current assessments of maximum capabilities of these aircraft. The actual current operations with these aircraft are at somewhat lower performance because of conservative operational practices with respect to fuel reserves and margins with respect to red-line speed limits. Partly because of the longer period of operational training and experience with the A-12, the operational limits are currently somewhat closer to the maxima. However the current operational limitation of the SR-71 to MACH 3.0 is primarily due to heating limitations on the sealant for the wingtanks.

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NRO and USAF review(s) completed.

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In order to provide a basis for comparison of the intrinsic aerodynamic performance of the two configurations, Lockheed was asked to provide data based on their flight tests and extrapolations from such tests. These data are presented on pages 4 to 8 of the attachments. The current levels of performance of both aircraft are somewhat better in range and poorer in altitude than the Lockheed data. Improvements in inlets and inlet controls, propulsion system, fuel management techniques, etc., which have been accomplished or are in process account for the small variations in performance figures which may be obtained from various sources.

The radar cross section of the two aircraft in a clean configuration is relatively low for both the SR-71 and the A-12. The SR-71 in its full sensor configuration is somewhat higher due to its larger size [redacted] 25X1

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Alexander H. Flax

Attachments
10 charts

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CURRENT PERFORMANCE COMPARISON

	SR-71	A-12
Range between tankers	[redacted]	
Penetration altitude (Initial cruise altitude)	74,000 Ft	76,000 Ft
End cruise altitude	83,000 Ft	85,000 Ft
Speed (MACH)*	3.2	3.2

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This above data has been provided by the respective program offices.

* At the present time it should be noted that the SR-71 is being flown at MACH 3.0 for training and the A-12 is normally flown at MACH 3.1 with correspondingly lower figures for other items of performance shown above.

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PERFORMANCE

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	Initial Cruise Altitude	Initial Cruise Altitude to Maximum Altitude
MACH 3.0		
A-12	72,000	80,400 to 89,400
SR-71	70,500	75,400 to 84,400
MACH 3.1		
A-12	74,000	81,450 to [redacted]
SR-71	72,250	77,400 to 86,200
MACH 3.2		
A-12	76,000	82,500 to [redacted]
SR-71	74,000	79,400 to 88,000

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Above performance has been provided by LOCKHEED based on their flight test data and as such are comparable.

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